TRANSACTIONS

OF THE

PHILADELPHIA ACADEMY OF SURGERY.

Stated Meeting, October 5, 1908.

The President, Dr. William T. Taylor, in the Chair.

GUNSHOT-WOUND OF THE ABDOMEN.

Dr. Charles F. Nassau presented three patients who had sustained gunshot-wounds of the abdomen. He said that it had always been his practice to immediately explore all gunshot-wounds in which there was a possibility that the ball might have entered the abdomen. Naturally, one should not do this, unless surrounded by the proper conditions and with the proper help to go ahead and perform any operation that the conditions found might necessitate. It seemed to him axiomatic that no gunshot-wound or stab-wound should be treated expectantly where there is the slightest suspicion of penetration of the abdominal cavity. The risks of delay are so disastrous and the danger of exploration so slight that the patient should be given the benefit in every instance.

Case I.—A white woman, aged 22, married, was admitted to St. Joseph's Hospital January 16, 1906, with the history of having been shot by her husband. When seen by Dr Nassau about three quarters of an hour after the injury, she showed such marked symptoms of internal hemorrhage that she was removed at once to the operating room. She was etherized, scrubbed and operated upon at once. The wound of entrance was situated about two inches to the left of the middle of a line drawn from the anterior superior spine of the ilium of the umbilicus. The ball had travelled upward and inward for about three inches in the abdominal wall, before it penetrated the peritoneal cavity. On opening the abdomen, there was a free gush of a large quantity

of bright red blood which was found to be coming from a large vessel towards the root of the mesentary of the small intestine. This was at once ligated. There were found altogether five perforations of the small intestine, two perforations of the mesentery, and one each of the greater omentum and the gastrocolic omentum. The patient was given an intravenous transfusion of salt solution during the course of the operation. She was on the operating table one hour and twenty-five minutes. The abdominal wound was closed without drainage by a combination of buried and through-and-through sutures. Wound healing was by first intention.

The patient's temperature fluctuated between 100 and 102 for 10 days. It came down to normal for four days; then for 28 days it ranged from 99 to 101; then for four days from 101 to 104, followed by five days of normal temperature. There remained a slight elevation of temperature until her removal from the hospital on April 12, 1906.

In explanation of this fever he stated that while she was being put to bed, after the operation, it was discovered that she had another bullet-wound, entering about two inches to the right of the eleventh dorsal vertebra. This bullet was lodged to the left of the spine, as shown by an X-ray plate, and had in its course completely divided the spinal cord. She was, of course, totally paralyzed from the waist down. This injury ultimately caused her death, some months after she was removed to her home.

CASE II.—Colored, aged 25, single. Shot at 11 P. M., March 7, 1908. Walked four squares to the station-house, from which he was brought to St. Joseph's Hospital, in the patrol wagon at midnight. The patient walked from the patrol wagon to the receiving ward, suffering no distress whatever. He had not vomited, and his pulse, temperature and respiration were normal. The wound of entrance was one inch above the crest of the ilium in the mid-axillary line on the left side. The bullet could be felt under the skin one and a half inches to the right of the umbilicus. He was operated on at 1.30 A. M., and was on the table one hour and thirty-eight minutes. After exploring the wound of entrance, and determining that the peritoneal cavity was open, the abdomen was then opened along the outer border of the left rectus muscle from just below the margin of the rib to

within an inch of the pubes. There were found two perforations in the transverse colon; these were so large and so close together that it required a sutured area nearly six inches in length to make a safe closure of the bowel. There were 12 perforations of the small intestine; two perforations of the mesentery of the small intestine with considerable bleeding; one perforation of the descending mesocolon, just above the sigmoid flexure. At one spot the bowel was so abraded that it was almost a perforation. The abdominal wound was closed without drainage by buried catgut, and through and through silk-worm gut sutures. The temperature went up to 103 at 4 P. M. of the same day. It fell to 100 during the night, and reached normal in three days. A portion of the upper angle of the wound broke down in about ten days, and healed by granulation, leaving a very small fistula at the upper end of the incision connected with the small intestine. Otherwise, in every way his recovery was normal. During the second week of September the patient had a bad cough and one day coughed so violently that he broke open his wound, and two loops of small intestine, about a foot in length, were extruded. Fortunately for him, this happened while he was in the hospital; the bowel was replaced by the resident physician, and the wound packed with iodoform gauze. The temperature went up to 101, but came down to normal the next day. Condition October 4, 1908, temperature normal, pulse 80, respiration 20. Dr Nassau said that he proposed to close the fistula shortly.

CASE III.—A white woman, aged 24, married, was admitted to the receiving ward at St. Joseph's Hospital July 7, 1908, at 2.45 A.M., suffering from an accidentally inflicted gunshot-wound of the abdomen. She was vomiting great quantities of dark brown fluid, was much shocked, and seemed to be suffering an excessive amount of pain; temperature was 97, pulse 102, respiration 26. She was operated upon at 4.30 A.M. She was on the table one hour and thirteen minutes. The wound of entrance was about two inches to the right of, and one and a half inches above the umbilicus. The abdomen was opened through the right rectus muscle, and in the peritoneal cavity there was much free blood; this bleeding came from the wounds in the transverse mesocolon and from the stomach. There were found one perforation in the hepatic flexure of the colon, two perforations in the transverse mesocolon, one being near its root and involving

a very freely bleeding vessel in the anterior layer which necessitated ligation, three perforations in the small intestine high up; one large perforation or slit, nearly three inches in length, just above the attachment of the gastrocolic omentum, about the junction of the left and middle thirds of the stomach. The abdomen was closed without drainage by buried catgut, and through-and-through silk-worm gut sutures. While searching for the source of the hemorrhage, which came from low down in the mesocolon, he could see the point on the lateral internal surface of the abdominal wall, where the bullet had passed out from the abdominal cavity, and buried itself in the muscles of the back. This was just below the spleen and above the anterior surface of the left kidney. The temperature ranged from 100 to 102 for five days, and then dropped to 99 and gradually came to normal. A portion of the wound healed by granulation. She was discharged from the hospital absolutely well, August 23, 1908.

About ten days after leaving the hospital she returned to the dispensary, and the bullet was removed from beneath the skin at a point just below the costal border, and about four inches from the spines of the vertebra on the left side.

None of these cases were drained. During the course of the operation the intestines and abdominal cavity were flushed constantly and copiously with normal salt solution. He thought that none of these cases had waited long enough before operation to involve any great amount of soiling of the peritoneum. The only question in his own mind was as to whether the various points of perforation were adequately repaired. If these were not going to leak, then he did not see reason for drainage. Certainly, one could not attempt to drain the many numerous and small areas that might be infected; therefore, he felt safe in trusting to the peritoneum whatever amount of infection might be left after his copious flushing. At all events, all the patients got well. In two of the three the bullet was recovered. All three were shot by a 32-calibre revolver at close range; the greatest distance being about five feet, and in the last case probably not more than eighteen inches, as the woman's nightgown was set on fire.

Dr. Nassau called attention to a condition that he observed in these three cases, and that he had also seen in several cases

of perforation of the bowel during typhoid fever, where operation was undertaken early. The intestinal walls, and the mesentery are of a pinkish color, and spread over them the vast network of lymphatic vessels seem to be over-distended, chalky white, and if any of these little branches be scratched with a needle point, a milky fluid exudes. In operation, as prolonged as any of these three, this condition, by the time the abdomen is closed, has almost entirely disappeared. Is this not nature's first great effort to do what she can to increase peritoneal resistance?

Dr. John H. Jopson spoke of three cases of penetrating wounds, with perforation of intestine in two cases, and of stomach and intestine in one case, which he had observed.

Case I.—A white boy, aet. 14, was admitted to the Presbyterian Hospital September 18, 1906. Four hours previous to admission he had received a wound in the right side of the abdomen, on a line above the umbilicus, by a 22-calibre rifle ball. On admission the temperature was 99 °, pulse 120, small and tense. The abdomen was slightly distended, tender, tympanitic in the centre, and dull in the flanks. Had vomited several times before admission.

Operation seven hours after accident. The bullet-wound had taken a downward and outward direction through the abdominal wall, and was very dirty. The peritoneal cavity contained a large amount of free blood and some beginning serous effusion. There was a large opening in the lower ileum opposite the mesenteric border, single and irregular, and two openings in the cæcum. All were closed by Lembert sutures of silk. The mesocolon was perforated, and digital examination discovered the much deformed bullet in the retroperitoneal tissues, from which situation it was recovered. Irrigation of abdominal cavity and drainage of pelvis by tube and gauze. There was considerable peritoneal reaction, free drainage and suppuration of the wound in the track of the bullet, but the boy made a good convalescence, and was discharged from the hospital a month later.

Case II.—A boy, aet. 6 years, was admitted to the Presbyterian Hospital December 28, 1907, having received an accidental wound by a ball from a 32-calibre revolver about a half hour previously. The patient showed some evidence of shock on admission; his temperature was 98.4 °, pulse 120. Condition at

time of operation good. Operation about two hours after accident. The bullet-wound lay in the median line, running downward from a point just below the ensiform cartilage. Oblique performation of the abdominal wall. There was a small amount of blood clot in the peritoneal cavity. The stomach and transverse colon were drawn out, examined carefully and found uninjured. The small intestine was then examined, and two perforations found in the jejunum about three inches from its origin, opposite each other, at the mesenteric and antemesenteric borders, and two openings in the mesentery. All were closed by suture of celluloid thread. The entire small intestine was gone over for other perforations, but none found. The ascending and descending colon could not be examined through the median wound, but as the bullet had apparently taken a direction obliquely backward it was thought they had escaped injury. Operation was well borne. Irrigation of the peritoneal cavity and a cigarette drain. The child had a fairly good night except for some restlessness. The pulse gradually increased in frequency and lessened in force. The temperature steadily rose. There was suppression of urine, but little vomiting. A little sanious discharge from the wound. The patient died 24 hours after operation.

Examination of the abdomen, post mortem, showed no macroscopic peritonitis, but a perforation of the large intestine, exact location not detected by resident physician, but probably of descending colon or sigmoid. The cause of death was probably a rapid peritonitis in spite of the absence of gross signs, clinical or pathological. The bullet was not traced or found, and before death the possibility of a wound of the kidney was considered as the explanation of the suppression of urine. This was probably a toxic condition, however.

CASE III.—A lad, aet. 15 years, a sturdy, active boy, was shot on May 11, 1908, at 3.30 P.M., by a B. B. cap fired from a 22-calibre rifle at a distace of about seven feet. The ball penetrated clothing and abdominal wall. There was little pain and no shock, and the boy did not know he was wounded until a bystander examined him. He walked five or six blocks to a physician's office, who at once sent him to the Presbyterian Hospital. On admission he presented no symptoms whatever. There was a small wound of the abdominal wall about two

inches below the border of the ribs on the left side and one inch outside the semilunar line. No rigidity or tenderness of the abdominal wall. Temperature 97.8 °, pulse 84, respiration 24. The ball could be felt beneath the skin of the back at the edge of the erector spinæ.

Operation five and one-half hours after accident. A four-inch incision was necessary to trace the small bullet wound through the muscular abdominal wall into the peritoneal cavity, which contained a small amount of blood. The splenic flexure of the colon lay immediately beneath the wound, and was surrounded by a hematoma beneath its peritoneal covering. It was with difficulty brought up into the wound. Prolonged examination failing to show the source of the hemorrhage, the peritoneum external to the colon was divided and stripped forward, when two small perforations were found in the colon, one on its anterior and another on its posterior surface, which were closed by double continuous Lembert stitches of Pagenstecher thread. The anterior wound had been the source of the hemorrhage. Blood and gas were seen to be coming upward from the direction of the cardiac end of the stomach, examination of which showed one perforation on the anterior and one on the posterior surface, very near the greater curvature. Both were closed by double layers of sutures. The intestine was gone over from the duodenum to the colon, examined, cleansed and returned. The upper abdomen was cleansed by wiping, and drained through the wound by cigarette drain and gauze packs. Partial closure of wound. The boy was turned on his side, and the skin nicked and the bullet removed from its subcutaneous location in the back. There was no shock and no diffusive peritoneal injection, although there was free drainage from the abdominal wound. Twelve hours after operation he drank all the water from a flower vase beside his bed. He was in the hospital a month and was discharged well.

Dr. Jopson said further that the questions raised by Dr. Nassau applied to the cases he reported. As to the importance of immediate operation in civil practice, there can be no question. The figures collected by Moynihan in his book on Abdominal Operations, and based on an analysis of 112 cases of gunshot-wound of the stomach, show a rapidly increasing mortality where operation was delayed.

As to the site of incision in the cases of gunshot-wound, it seemed to him that where there is only one wound, and this well to one side of the median line, it is preferable to make the incision in this site rather than in the median line, but where there are several wounds one must rely on the median incision.

In the second case a perforation in the descending colon or sigmoid was overlooked, and he did not see how this could have been discovered unless there had been added to the primary wound another on the left side of the abdomen. This question is one of considerable importance, as the responsibility of overlooking a gunshot-wound of the intestine is not lightly to be taken.

Regarding the technic of suture of small wounds there is a little difference of opinion. Some surgeons think a purse-string causes too much narrowing.

The question of drainage depends somewhat on one's predilections. The importance of posterior drainage in gunshot-wounds of the stomach has been pointed out by Roswell Park. In cases of gunshot-wound of the cardiac end of the stomach, such as the one here reported, anterior drainage will probably often suffice.

ACUTE CARCINOMA OF BREAST.

Dr. William L. Rodman presented a woman, 45 years of age, who had been the subject of acute cancer of the mammary gland, the second he had encountered of this very rare affection.

Her history is as follows: Her mother is living at seventy years, her father died at seventy-two. None of four sisters had mammary tumors. She has had but one child, who is now nineteen years old. She never had abscess of the breast.

In January, 1908, she noticed a marked retraction of the nipple of her left breast. The entire breast then began to enlarge and she very soon noticed that the greatest enlargement was in the axillary hemisphere. There was, however, no distinct tumor. In short, the process was a diffused, not a discrete one. About three years ago she accidentally struck this breast while getting out of the window. In March, 1908, she consulted one of the surgeons in one of the most prominent hospitals of this city, and a diagnosis of mastitis was made. If her condition in March was at all similar to what it was early in September, the mistake in diagnosis can easily be understood.